

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

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| In the Matter of |) | |
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| Wireless Operations in the 3650-3700 MHz Band |) | ET Docket No. 04-151 |
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| Rules for Wireless Broadband Services in the 3650-3700 MHz Band |) | WT Docket No. 05-96 |
| |) | |
| Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band |) | ET Docket No. 02-380 |
| |) | |
| Amendment of the Commission's Rules With Regard to the 3650-3700 MHz Government Transfer Band |) | ET Docket No. 98-237 |
| |) | |

**REPLY OF XO COMMUNICATIONS, INC.
TO OPPOSITIONS AND COMMENTS TO
PETITIONS FOR RECONSIDERATION**

XO Communications, Inc. ("XO") pursuant to Section 1.429(f) of the rules and regulations of the Federal Communications Commission ("FCC" or "Commission")^{1/} and the invitation extended by the FCC in the Public Notice issued on July 18, 2005^{2/} hereby submits its reply to the oppositions and other comments filed in response to the petitions for reconsideration of the Report and Order and Memorandum Opinion and Order ("Order") released by the FCC in the above referenced matter on March 16, 2005.^{3/}

XO submitted an opposition in this proceeding on August 11, 2005. In its opposition, XO demonstrated that the best way to assure access to last mile wireless broadband spectrum,

^{1/} 47 C.F.R. 1.429(f) (2004).

^{2/} Petitions for Reconsideration of Action in Rulemaking Proceeding, Public Notice, Report No. 2722 (July 18, 2005); Petitions for Reconsideration of Action in Rulemaking Proceeding, 70 Fed. Reg. 43, 429 (July 27, 2005).

^{3/} *Wireless Operations in the 3650-3700 MHz Band*, Report and Order and Memorandum Opinion and Order, 20 FCC Rcd 6502 (2005) ("Order").

especially in rural areas, is through an unlicensed approach. XO pointed out that slight modification of the FCC's plan will allow effective use of the 3650-3700 MHz band (the "3.6 GHz Band") without the need for licensing. XO also noted that in the long run, use of contention based technology in connection with frequency coordination is preferable to an approach under which access to spectrum is limited by participation in a competitive bidding process. Nevertheless, XO supported clarification of the contention based protocol requirement.

XO argued that the FCC should not reject use of contention based protocols merely because the technology is not yet fully developed. In the interim, XO recommended the use of industry standard coordination processes in order to ensure access to the 3.6 GHz Band by multiple entities in the same geographic area and to prevent one or a limited number of entities from controlling this valuable resource. XO pointed out that these frequency coordination processes can continue to be used, even after contention based protocols are developed. At that time, those protocols can become an additional coordination tool. Because neither frequency coordination nor a combination of contention based technologies and coordination will permit an unlimited number of users, XO also recommended the use of specific performance standards to ensure that entities are sincere in their request for spectrum and that once authorized, that they employ their authorized spectrum.

As the oppositions demonstrate, most other parties agree with XO and disagree with those who claim that the 3.6 GHz Band should be made available on a licensed (and presumably auctioned) basis. Moreover, those who oppose the Order appear to do so on bases that have already been rejected by the FCC; they are re-arguing the positions that they took in the earlier

phase of this proceeding and that have been rejected by the FCC.^{4/} XO is, therefore, pleased to have this opportunity to note the substantial agreement among the parties in this proceeding regarding the use of the 3.6 GHz Band on an unlicensed basis.

DISCUSSION

The opposition submitted by the Wireless Communications Association (“WCA”) pronounces that “[t]he record before the Commission establishes that as manufacturers and service providers consider the potential utility of the band for delivering broadband services, the lack of any regulatory mechanism for assuring superior quality of service (“QoS”) is an overriding concern.”^{5/} WCA uses this assertion as a basis for its continued position that the use of the 3.6 GHz Band should be permitted on a licensed basis only. WCA is incorrect. In fact, except for two, all of the other service providers that submitted oppositions supported the FCC’s approach of limited or no licensing.^{6/}

^{4/} See, e.g., Oppositions of Champaign Urbana Community Wireless Network, *et al* (“Champaign Urbana”) at 5 and Cisco Opposition to Petitions for Reconsideration at 2 (“The Commission should rarely revisit any decision on the basis of petitions that present no new facts or arguments, and the petitioners simply have not presented any new facts or arguments...”).

^{5/} Consolidated Opposition and Comments to Petitions for Reconsideration of the Wireless Communications Association (“WCA Opposition”) at 2.

^{6/} Verizon and TDS Telecommunications Corp., both incumbent service providers, support the use of the 3.6 GHz Band on a licensed basis. Although Sprint Corporation submitted Comments, it limited those Comments to matters concerning the protection for incumbent satellite earth station operators in the 3.6 GHz band. The FCC should reject Verizon’s request that the 3.6 GHz Band be licensed by auction. Few entities would be better positioned to participate in a spectrum auction than Verizon. There is little mystery, therefore, why Verizon prefers this approach -- it can secure use of the spectrum for itself and exclude others from using this resource.

It is true that manufacturers support a licensed approach.^{7/} However, the FCC cannot allow equipment manufacturers to drive the FCC's decision in this proceeding.^{8/} As XO pointed out in its Opposition, manufacturers have an interest in promoting the technology that they have already developed and necessarily wish to recoup their existing investment. XO noted that a requirement to develop a spectrum sharing protocol may not allow manufacturers to recapture their investment. Others were not as gentle as XO. Lariat.net, for example, said that "[w]e are concerned that the present petition for reconsideration was motivated by corporations' selfish interests and is not in the public interest" and that "[w]e may (and already do) see some laziness on the part of equipment manufacturers, who seem not to want to engage in technological innovation but rather to sell 'tweaked' versions of the equipment they already have on hand."^{9/} Similarly, RapidDSL & Wireless, Inc. argues that instead of arguing that quality of service cannot be delivered on unlicensed spectrum manufacturers should "[m]ake better radio better able to withstand interference."^{10/} It is clear, therefore, that the FCC must view with skepticism the positions of equipment manufacturers who assert that quality service cannot be provided in unlicensed spectrum.

^{7/} A notable exception is Tropos Networks, which supports the FCC's approach and appears to endorse a contention based protocol, even though it also seems to have invested heavily already in what may be incompatible technology at 2.4 GHz.

^{8/} Despite the fact that XO disagrees with the majority of manufacturers regarding whether the 3.6 GHz band should be available on a licensed or unlicensed basis, it agrees with manufacturers that no particular spectrum sharing protocol should be adopted by the FCC. It concurs, therefore, with those parties that ask the FCC to reject the Petition for Reconsideration submitted by BRN Phoenix, Inc. ("BRN") which asks the FCC to select its protocol as the single spectrum sharing protocol.

^{9/} Statement of Lariat.net at 1, 2.

^{10/} Comments of RapidDSL and Wireless, Inc. at 3.

On the other hand, the entities that would actually be making money from the provision of service -- and therefore would have everything to lose by offering service that customers would not purchase -- almost unanimously support the approach adopted in the Order.^{11/} Nor is there any support among potential service providers for split use of the band -- either by spectrum or geography. Instead, likely service providers seek the potential use of 50 MHz of spectrum in both rural and urban areas. The comments of Champaign Urbana “take[s] strong exception to Petitioners argument that congested urban areas cannot effectively use the spectrum under the current rules.”^{12/} As Cisco points out, the suggestion to have one approach for urban areas and another for rural areas would “in effect authorize two different services, one for the largest metropolitan areas and one for everyone else. This is rarely a good idea...”^{13/}

Others’ support of an unlicensed approach, coupled with site registration, is based on rationale similar to XO’s. Cisco points out that:

Non-exclusive nationwide licensing has many of the more attractive features of unlicensed use, including low regulatory costs for end users, minimal delay, and tremendous flexibility of deployment. At the same time, the minimal licensing requirements together with the registration rules will facilitate coordination between operators and will give the Commission readily available information about activities in the band.^{14/}

Manufacturers’ principal rationale for asking the FCC to permit only licensed access to the 3.6 GHz band is the belief that unlicensed operations will not offer high enough quality of service and that contention based protocols are insufficient to ameliorate the effects of multiple

^{11/} Among others, over 100 wireless internet service providers (“WISPs”) submitted brief comments. XO does not list them here, but notes that each supports the FCC’s approach.

^{12/} Oppositions of Champaign Urbana Community Wireless Network, *et al* at 5.

^{13/} Cisco Opposition to Petitions for Reconsideration at 5.

^{14/} Cisco Opposition at 6.

party access to unlicensed spectrum. However, few of the parties supporting an unlicensed/site registration are naïve enough to believe that if the FCC simply permits unlicensed use of the 3.6 GHz band, without more, there will be sufficient quality of service to support both investment and consumer acceptance. Many commenting parties continue to support the use of contention based protocols exclusively as the mechanism by which multiple parties can use the band.^{15/} As XO noted in its Opposition, more time is required to develop spectrum sharing protocols, but, once developed, they will be an effective tool for managing the use of the 3.6 GHz band by multiple parties.^{16/}

Indeed, the FCC has already recognized the potential benefits of cognitive radio techniques such as spectrum sharing protocols. In its recent Report and Order adopting rules promoting the use of software defined radios, the FCC said that “[t]hese technologies hold tremendous promise in helping to facilitate more effective and efficient access to spectrum by opening opportunities for spectrum use in space, time, and frequency dimensions that until now have been unavailable. The ability of cognitive radio technologies to adapt a radio’s use of spectrum to the real-time conditions of its operating environment offers regulators, licensees, and the public the potential for more flexible, efficient, and comprehensive use of available spectrum while reducing the risk of harmful interference.”^{17/} As the Commission pointed out in the Cognitive Radio Report and Order, similar techniques are already in use and mandated by FCC

^{15/} See, e.g., Cisco Opposition at 10-12, Oppositions of Champaign Urbana at 8-9.

^{16/} Moreover, as XO noted, whatever delay may be necessary to develop spectrum sharing protocols is preferable to the alternative -- licensed (and auctioned) use of the 3.6 GHz Band. As XO points out, in the interim, other mechanisms are available to aid in the management of the spectrum.

^{17/} *Facilitating Opportunities for Flexible, Efficient and Reliable Spectrum Use Employing Cognitive Radio Technologies*, Report and Order, 20 FCC Rcd 5486 (2005) (“Cognitive Radio Report and Order”) at ¶18.

regulations.^{18/} Therefore, the FCC should reject manufacturer suggestions that contention based protocols will not be an effective mechanism to manage unlicensed use of the 3.6 GHz Band.

However, XO believes, as do others, that spectrum sharing protocols may not be sufficient -- either in the short term or possibly in the long term -- to ensure that the 3.6 GHz band is effectively managed. Unlike Cisco, XO is not sanguine that mutual cooperation alone is sufficient to allow effective use of the band. Instead, many commenting parties note the additional mechanisms -- beyond spectrum sharing protocols -- that can be employed to ensure that the 3.6 GHz band is productively employed. XO, for example, has suggested that frequency coordination, which can limit the amount of spectrum that any one entity is permitted to employ at a transmitter site, can be an effective tool to manage the spectrum. Similarly, XO suggested that performance requirements will ensure that registered spectrum will not be used to prevent access to spectrum by others.

Others propose alternative approaches. For example, AirStream Data LLC (“AirStream”), urges the FCC to adopt an approach under which the Commission would establish a deadline for the submission of applications to use the spectrum in a geographic area, and all entities that submitted such an application would be required to arrive at a spectrum sharing protocol. The American Petroleum Institute (“API”) argues that “interested industry representative should be encouraged to reach a consensus on an effective management approach for this spectrum.”^{19/} Part-15.ORG also suggests a “moderated” use of the 3.6 GHz band.^{20/} XO

^{18/} *Id.* at ¶ 12.

^{19/} Opposition/Comments of API at 6.

^{20/} It is not clear with Part-15.ORG’s approach is significantly different from that already contained in the Order.

is not convinced that the approach suggested by either AirStream or API is correct and believes that its frequency coordination suggestion will go further to promote the most intense use of the 3.6 GHz Band.^{21/} Nevertheless, each of these entities supports the fundamental premise of XO's position -- that whether it is contention based protocols alone or in connection with other mechanisms, spectrum management tools can lead to the effective use of the 3.6 GHz band without the need to permit the use of the band only on an auctioned, exclusive basis.

^{21/} The AirStream recommendation, for example, could encourage entities to participate in every application submission window, whether or not they intended to offer service. API's approach unnecessarily rejects a contention based approach. XO believes spectrum sharing technology should be an important part of the FCC's plan to permit the use of the 3.6 GHz band on an unlicensed basis.

CONCLUSION

WHEREFORE, THE PREMISES CONSIDERED, XO Communications, Inc. hereby submits the foregoing reply to the oppositions to petitions for reconsideration in this proceeding and asks that the FCC proceed in a manner consistent with the views expressed herein.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, Stefani Watterson hereby certify that on this 24th day of August 2005, the foregoing Opposition of XO Communications Inc. was delivered, via first class mail to the following:

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